AMENDMENTS

Listing of Claims

The following listing of claims replaces all previous listings or versions thereof:

1-43. (Canceled)

44. (New) A method of assessing protein stability, folding and/or solubility comprising:

a) providing a fusion protein comprising (i) a protein of interest and (ii) a first segment of a marker protein, wherein said first segment does not affect the folding or solubility of the protein of interest;

b) contacting said fusion protein with a second segment of said marker protein, wherein said second segment is capable of structural complementation with said first segment; and

d) determining structural complementation,

wherein a greater degree of structural complementation, as compared to structural complementation observed with appropriate negative controls, indicates stability, proper folding and/or solubility of said protein.

45. The method of claim 44, wherein said fusion is C-terminal to said protein of interest.

46. The method of claim 44, wherein said fusion is N-terminal to said protein of interest.

47. The method of claim 44, wherein said marker protein is selected from the group consisting of a target binding protein, an enzyme, a protein inhibitor, a fluorophore and a chromophore.

48. The method of claim 47, wherein said marker protein is a target binding protein.

49. The method of claim 48, wherein said target binding protein is ubiquitin.

50. The method of claim 47, wherein said marker protein is a chromophore.

51. The method of claim 50, wherein said chromophore is green fluorescent protein, blue fluorescent protein, yellow fluorescent protein, luciferase or aquorin.

52. The method of claim 47, wherein said marker protein is an enzyme.

53. The method of claim 52, wherein said enzyme is β-galactosidase, cytochrome c, chymotrypsin inhibitor, Rnase, phosphoglycerate kinase, invertase, staphylococcal nuclease, thioredoxin C, lactose permease, amino acyl tRNA synthase, and dihydrofolate reductase.

54. The method of claim 53, wherein said enzyme is β-galactosidase.

55. The method of claim 54, wherein said first segment is the α-peptide of β-galactosidase, and said second segment is the ω-peptide of β-galactosidase.

56. The method of claim 44, wherein said protein of interest is Alzheimer's amyloid peptide (Aβ), SOD1, presenillin 1 and 2, α-synuclein, amyloid A, amyloid P, CFTR, transthyretin, amylin, lysozyme, gelsolin, p53, rhodopsin, insulin, insulin receptor, fibrillin, α-ketoacid dehydrogenase, collagen, keratin, PRNP, immunoglobulin light chain, atrial natriuretic peptide, seminal vesicle exocrine protein, β2-microglobulin, PrP, precalcitonin, ataxin 1, ataxin 2, ataxin 3, ataxin 6, ataxin 7, huntingtin, androgen receptor, CREB-binding protein, dentaorubral pallidoluysian atrophy-associated protein, maltose-binding protein, ABC transporter, glutathione S transferase, and thioredoxin.

57. The method of claim 44, wherein said negative control utilizes a fusion protein that is improperly folded and/or insoluble.